9. Irina

Program Name: Irina.java Input File: irina.dat

Irina is in the middle of a bank robbery. She has very little time because the authorities are on the way. Around her are sacks of money containing various coin denominations. Each bag contains only one denomination, and is clearly labeled with that denomination. She already knows how much each coin weighs, and can do amazingly quick mental mathematics, but is still not as quick as a computer program. Also, as much as she has been working out, building her strength for this job, she can still only carry up to 45 kg of weight. Write a program to help her decide which bags she should take to maximize the profits of her bank heist!

The individual weights in grams of the different denominations of US coins are:

- Penny 2.5
- Nickel 5.0
- Dime 2.25
- Quarter 5.6
- Dollar coin 8.1

Note: 1 kg = 1000 g

Input: The first integer N will indicate the number of data sets to follow. Each of the following data sets will begin with an integer, I, representing the number of bags Irina has to choose from. The next I lines will be an integer, W, representing the weight of the bag in kg and a single word of {pennies, nickels, dimes, quarters, dollars} representing the denomination of coin in the bag.

Output: The string "**`GRAB THE <w> KG BAG OF <denomination>`**" for each of the bags that Irina should take that overall doesn't exceed her carrying capacity but maximizes her profits. All output should be sorted in decreasing order by weight of the bag, and then by decreasing denomination (dollars, quarters, dimes, nickels, pennies). Print an empty line between data sets.

Assumptions: All bags will be uniquely identifiable by their weight and coin denomination contained. There will be at least one bag for Irina to rob. All solutions will be unique.

Sample Input:

```
3
3
40 DOLLARS
15 DIMES
4 DOLLARS
10
15 DIMES
4 DOLLARS
300 PENNIES
7 DOLLARS
5 QUARTERS
45 QUARTERS
40 NICKELS
40 PENNIES
35 NICKELS
20 QUARTERS
5
20 QUARTERS
26 DIMES
11 NICKELS
11 DIMES
12 NICKELS
```

Sample Output:

```
GRAB THE 40 KG BAG OF DOLLARS
GRAB THE 4 KG BAG OF DOLLARS

GRAB THE 20 KG BAG OF QUARTERS
GRAB THE 7 KG BAG OF DOLLARS
GRAB THE 5 KG BAG OF QUARTERS
GRAB THE 4 KG BAG OF DOLLARS

GRAB THE 26 KG BAG OF DIMES
GRAB THE 11 KG BAG OF DIMES
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